

ABSTRACT OF THE DISCLOSURE

A wireless communication system that provides energy efficient, high bandwidth and low cost wireless communication. In one embodiment, the communication
5 system utilizes a fan out, pencil beam arrangement in which electro-magnetic energy is transmitted from a hub to customer premises equipment (CPE) with a fan or similar antenna and from the CPEs to the hub via pencil beam antennas. The pencil beam antennas provided higher
10 link margin. The hub may include a shared aperture antenna device for receiving pencil beam transmissions from the CPEs. A shared aperture antenna device may also be used for transmission from the hub to the CPEs.